## 2.0 VERIFICATION RESULTS

Table 2.0-1 lists the FEs verified to date along with errors or anomalies reported as a result of verification. No errors were found in the implementation of MTI, Range Track, and the scintillation portion of the Signature Fluctuations FEs. Only minor discrepancies were found in the implementation of Multipath/Diffraction, Angle Track, and Force and Moment Generation. Several discrepancies were found in the glint portion of the Signature Fluctuations FE and a major discrepancy exists in the implementation of the Missile Movement FE, resulting in incorrect missile trajectory and orientation when the missile's pitch angle is near vertical.

TABLE 2.0-1. ESAMS 2.6.2 Error Summary.

| FAT Key | Functional Element | Error Summary |
|---|---|---|
| 1.2.2 | Target Characteristics<br>Signature Fluctuations | • Sine-elevation cofactor should not be included in body length and wing length calculations.<br>• Time step should not be divided by 2 in the glint correlation coefficient calculation.<br>• Variable KFIRST improperly initialized. |
| 2.3 | Propagation Multipath/ Diffraction | • Vegetation scattering coefficient should be explicitly represented in the code.<br>• Multipath effects should not be calculated when the first Fresnel zone does not intersect the ground plane.<br>• Subroutine FACET gives correct results only when pointing directions are in 1st quadrant. |
| 6.2.1 | Signal Processing<br>Clutter Rejection<br>MTI | • No errors found. |
| 7.1 | Target Tracking Angle | • Possible divide by zero in subroutine DEMOD2.<br>• Very small sum channel signals produce unreasonably large angle errors. |
| 7.2 | Target Tracking Range | • No errors found. |
| 11.1 | Force and Moment Generation | • FMACH is not limited when basic drag coefficient array is accessed.<br>• FMACH and AOA are not limited when accessing incremental drag coefficient array.<br>• Possible discontinuity in GAMMAZ, PSIM2, and Euler angles when switching from primary to secondary angles or vice-versa. |
| 11.2 | Missile Movement | • Potential overflow in calculation of PSID, PHID, PSIDD, and PHIDD.<br>• Missile can pitch to >90˚ with errors in heading.<br>• All code associated with secondary Euler angles is never used.<br>• PSI heading may be outside 0-2π limits for one iteration. |